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JAPANESE PATENT OFFICE

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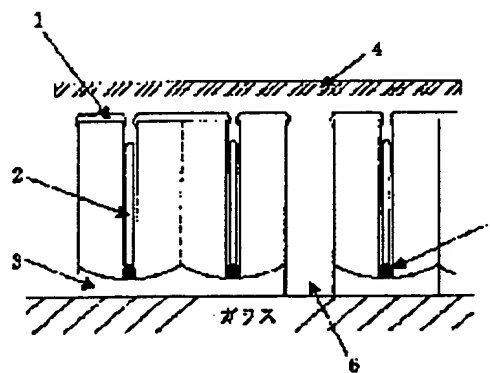
MATSUDATE MASASHIGE

(54) ELECTRON EMISSION ELEMENT AND MANUFACTURE THEREOF

(57)Abstract:

PROBLEM TO BE SOLVED: To provide an electron emission element with its timely stabilized current strength by using a carbon nano-tube for an electron source.

SOLUTION: An alumina layer is provided on a glass substrate in which an aluminum layer 3 is intervened. The alumina layer is provided with fine pores reaching the aluminum layer. For each fine pore, a carbon nano tube 2 grown with a metal catalyst being a starting point exists. Electric power is supplied to this carbon nano tube 2 through a aluminum substrate and functions as an electron source. Since the carbon nano tube 2 is small in curvature radius at a tip end thereof, the electron source with its high electron emission efficiency and superior current strength stability can be manufactured with a



simple process.

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